

Provo River Bridge
(Columbia Lane Bridge)
Spanning the Provo River
at 625 West Columbia Lane
Provo
Utah
Utah

HAER No. UT-61

HAER
UTAH
25-PROVO,
2-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Rocky Mountain Regional Office
U. S. Department of the Interior
P.O. Box 25287
Denver, Colorado 80225

HISTORIC AMERICAN ENGINEERING RECORD

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Location: Spanning the Provo River at 625 West Columbia Lane
Provo, Utah County, Utah

UTM: A 12/443100/4455680
B 12/443140/4455660
Quad: Orem, Utah

Date of Construction: 1919

Present Owner: Provo City, Utah

Present Use: Vehicular and pedestrian bridge to be replaced by a new vehicular and pedestrian bridge. Projected date for demolition is the summer of 1990.

Significance: The Provo River Bridge is a two-span, earth filled, reinforced concrete, closed spandrel deck arch bridge with Beaux Arts-influenced balustrades. It is one of only two earth-filled concrete arch bridges in Utah and the only one unaltered since its construction.¹

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(with a contribution by)

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I. HISTORY

A. Need for a Bridge

In 1850, just two years after the founding of the first Mormon settlement in the Salt Lake Valley, an ambitious plan was initiated to link the recently proclaimed State of Deseret to a Pacific port. This "Mormon Corridor" was to be protected by a string of settlements stretching from the Salt Lake Valley to San Bernardino, California.² A narrow strip, bordered by contiguous ranges of mountains to the east and desert to the west, offered both Mormon settlers and sojourners the only reliable water and forage through much of the Utah section of the proposed route. The road linking the fledgling Mormon communities rapidly developed into one of Utah's earliest and most important road systems. Utah's first modern north to south paved automobile highway paralleled and, in places, followed the original pioneer road.

Increasing use of the route in the early 1850s resulted in pressure for improvements to make the road passable in all seasons. The Mormon leadership, though wanting to keep its distance from Federal control, was not adverse to availing themselves of Federal assistance. In 1854, John M. Bernhisel, the territorial delegate to the Thirty-third Congress, introduced a bill calling for \$25,000 for the construction of a military road from Salt Lake City to southern California, following the route of the already-established trail. The bill was passed by Congress and became law on July 17, 1854.³

The road work was performed by local labor under the supervision of Lieutenant Colonel Edward J. Steptoe. The small amount appropriated was to be applied to the most formidable obstacles on the road. The first contract, for \$8,400, was with William J. Hawley, a Utah road builder, for grading and widening the approaches, and to construct a bridge across the Provo River.⁴ Of the remaining \$16,600, major contractor James B. Leach received \$15,000 for ditching, grading and widening along the route. The balance, \$1,600, was paid to a couple of minor contractors. The cadastral survey map, completed for the Surveyor General's Office in June 1856, depicted a bridge in the northwest quarter of the northeast quarter of the southeast quarter of section 36 - the approximate location of the modern Provo River Bridge.⁵

Wood stringer bridges, like the first Provo bridge, often succumbed to the powerful runoff of Utah's mountain rivers. Counties assumed much of the burden for road maintenance in territorial Utah, but the legislature appropriated money for substantial improvements on the major roads.⁶ In 1867, A. Gardner of Provo was awarded a contract for \$7,000 to erect a bridge across the river at a site selected by Brigham Young.⁷ Periodic replacement continued until iron truss bridges became available and affordable.

Throughout Utah's territorial period and into the early years of statehood, road and bridge construction and maintenance was a responsibility of the counties. Funding was provided by a poll tax payable in labor or case, with road work supervised by the various counties. This system prevailed until 1909 when the Utah Legislature established the State Road Commission. Under

the newly-created commission, each county was to nominate roads to the new state system, subject to approval by the commissioners.⁸

At the commission's meeting on August 23, 1910, the motion carried "that the county road, beginning at the north boundary of Utah County and running through Lehi, American Fork and Pleasant Grove to Provo, be designated as a portion of the state highway in Utah County."⁹ Thus, the section of road containing the Provo River Bridge became part of the new system of state roads.

A scarcity of funds resulted in few immediate improvements to roads included in the new statewide system. The advocates for good roads in Utah gained increasing momentum in the early teens, in large part due to the desires of an increasing number of people in Utah who owned automobiles and who desired better roads. These desires were heard at the State Capitol. Priority was given to building a high volume hard surface road linking the populous areas of the state, beginning near the Idaho line at Richmond and ending in Payson, south of Provo. The best existing bridges, including the one that crossed the Provo River, were narrow trusses clearing unsuited for the demands of a modern roadway.

American entry into World War I initiated a hiatus in Utah's ambitious road improvement plans. State and Federal agencies worked in concert to divert material and energies to the war effort. The Fifth Biennial Report of the State Road Commission noted that:

State Road work has been greatly hampered due to the fact that the United States Highway Council made it necessary to have all projects approved, and unless they believed the project absolutely essential in helping to win the war, they refused to furnish priority orders on shipment of necessary steel and cement. We were also held up to a large extent on account of the Capitol Issues Committees refusing to allow the sale of Utah State Road Bonds, they, of course, working in conjunction with the United States Highway Council.¹⁰

At their February 13, 1918, meeting, the State Road Commission informed a delegation from Utah County that there was no hope of funding road construction in their county that year. The commissioners advised them that the road from Pleasant Grove to Provo would be advanced from 29th to either 10th or 11th on their priority list for 1919.¹¹

With the cessation of hostilities in Europe, an unprecedented flurry of road building began in Utah. In his 1919 message to the legislature, Governor Simon Bamberger, an enthusiastic proponent of better roads, noted that because of the war time restrictions, only \$750,000 of the \$2,000,000 bond issue authorized for road improvements in 1917 had been sold. The governor initiated, and the legislature passed, passed an additional \$4,000,000 bond issue. Utah was also due an extra \$2,000,000 in Federal-aid fund for projects delayed by the war, as well as money from the county bond issues to cover their share of road building costs.

Road building enthusiasts were also vocal on the local level. An editorial in the March 10, 1919, Provo Herald proclaimed that:

The good roads movement has certainly taken root in the minds of the people of Utah County and they are stirred to the limit in this particular. It is the right spirit and will do more to make Utah a desirable place in which to live than any other move we could make at this time.¹²

With abundant funds at its disposal and wartime restrictions a memory, the State Road Commission embarked on an unprecedented road building program.

By the end of the 1919-1920 biennium, the commission had accomplished its long-deferred plan of completing a two-lane paved highway through the most populous part of the state.

Each component in the road commission's paving program was offered separately for bid. Structures, like the Provo River Bridge, were bid separately from paving contracts. The State Road Commission received bids for the paving from Provo to Pleasant Grove on May 28, 1919, and approved the contract on June 5, with the successful bidder being Alston and Hoggan.¹³ Bids for construction of the bridge were accepted at the July 1 meeting of the commission.

B. Construction Chronology

The Engineering Department of the State Road Commission completed plans for the Provo River Bridge on June 5, 1919. The project was advertised and opened in late June. Due to some miscommunications, the first round of bids were not accepted, as described in a Salt Lake Tribune article of June 25, 1919:

...H. G. Gilkerson, who bid \$15,138.13 on a reinforced bridge at Provo, asked to be permitted to withdraw his bid, on the ground that he made a mistake in his calculations. It was found that the new lowest bidders, Schuyler and Sorenson, at \$17,942.48, had also omitted one item, the cost of removing the present structure. Both the other bids were for more than \$20,000 each, and the [Road] commission decided to readvertise the work, the bids to be opened early in July...¹⁴

At its July 1st meeting, the road commission received four bids for the "construction of the Provo River Bridge 1-1/4 miles from Provo City, also for the removal of the old bridge." A bid again came from Schuyler and Sorenson, from the Steel Construction, as well as from Alston and Hoggan (the chief contractor for the adjoining road paving project), and from John Holt, a building contractor from Utah. After tabulation by the bridge engineer, the contract was awarded to John Holt, the low bidder at \$17,776.04. Actual construction costs were estimated at \$23,141.24, including materials to be furnished by the State.¹⁵

At its July 22nd meeting, a representative of Utah County requested that the old Provo River bridge be given to the county. The commissioners approved the county's request to reuse the original structure to bridge the Provo Canyon at Vivian Park.¹⁶

No mention of the bridge's completion dates appears in minutes of the State Road Commission or in available copies of the Provo Herald or Provo Post (many issues from this year were destroyed and, therefore, are not available). The last entry in the road commission's ledger that mentions its share of construction expenses for "Bridge #57 (Provo River)" was November 22, 1919.¹⁷ It appears, however, that the bridge construction was not completed until at least early December. On December 5, 1919, an editorial in the Provo Post indicates that the bridge had been completed at this time, but was not yet useable:

Contractor Holt has finished and turned over the elegant new cement bridge across Provo river, just north of the city, but there is unusual delay in making passable the approaches to the bridge. The result is that the public is compelled to a dangerous route across the river below the bridge. The temporary bridges are narrow and dangerous and the roadway equally dangerous... The bridge is completed and the only remaining part of the work undone is the approach to the bridge.¹⁸

C. Location and Subsequent Name Change

The road commission evinced some pride in the new bridge as a symbol of progress when they used it as the frontispiece photograph for the "Sixth Biennial Report."¹⁹ The Provo River Bridge was located on the trunk section of Utah's burgeoning highway system between two of the State's major cities. The highway on which it was located was part of the first numbered system for designating roads as State Trunk Road One.²⁰ It was also part of the Arrowhead Trail - an early road marking system promoted by the Automobile Club of Southern California.²¹ After Utah adopted the Federal numbering system for highways in 1927, the road bore the designation of Route 91.²² The bridge continued to be an integral part of Utah's highway system until 1942.

Ironically, war delayed the construction of the Provo River Bridge, and war also caused its replacement. Utah's inventory of its Strategic Network of Roads, as required by the Defense Highway Act of 1941, determined that 58 of its 175 bridges of more than 20 feet in length, failed to meet Federal requirements. The commission also considered it imperative to widen U.S. 91 to four lanes from Brigham City to Spanish Fork because of the growing volume of traffic.²³ During the 1942 construction season, a 125-foot 1/2-inch, two-span concrete I-beam bridge was constructed a short distance upstream on a new road alignment as part of Strategic Network-Federal Aid Project 36-A(3).²⁴

The Provo River Bridge and the truncated segment of highway at either end became Columbia Lane when it came under the jurisdiction of Utah County in 1942.

By virtue of association with the street name, the Provo River Bridge came to be called the Columbia Lane Bridge. On December 7, 1944, the bridge was annexed by Provo City, as part of the North Provo Addition.²⁵

II. THE BRIDGE

A. Description

This 71-year-old bridge runs roughly east to west across the lower Provo River, about five miles north of where the river exits into Utah Lake. As designed and represented in three sheets of construction drawings prepared in 1919, the Provo River bridge was to be a two-span, reinforced concrete structure measuring 37 feet 6 inches wide by 128 feet long. Rectangular in plan, the bridge was to have 45-degree retaining abutments at each corner plus sidewalks along both sides of a 24-foot-wide roadway. The drawings show a four-foot, six-inch-wide central abutment or "cutwater," pointed on each end to deflect water. The bridge was to sit low in the water, the tops of each of the multi-radius, 50-foot spanning arches to be only seven feet above normal water level. Along the walkway were to be classical balustrades, each terminating in a moulded, paneled block at the four corners.

Perhaps for budgetary reasons, the bridge was built somewhat differently than drawn. The size and structural elements seem to be the same but the balustrade was done with simple, round-arched openings in the rail-wall instead of classical, "turned" balusters as drawn. The four-end blocks at the corners of the bridge were smaller and simpler than drawn and curve slightly outward in a flare instead of being rectangular.

Originally paved with asphalt and concrete topping, the driving deck has been repaved and presently features two lanes of asphalt surfacing. The sidewalks remain, but are now nearly flush with the road paving. There is no curbing, as originally existed. Recent inspections of the substructure and superstructure have graded the condition of these areas fair to good.

Despite some spalling and the exposure and rusting of reinforcing bar, the arches and other major structural components seem to be sound, as indicated by the fact that the bridge is kept in use. Inspectors have noted, however, some deflection and cracking in the sidewalk overhang. Deterioration of the trim here is minor, occurring mostly along the outside concrete beltcourses at the bottoms of the balustrades.

Over the years, the bridge has taken on new duties and loads, such as carrying some large, metal pipes suspended by hangers and straps from the underside of the cantilevered beams extending out from the arches. Other than minor repairs and maintenance, the bridge appears to have retained the integrity of its original construction.

B. Modifications

Only one minor modification has been made to the structure since its completion in 1919. A project in the 1920s added an upstream retaining wall and rip rap to the east upstream wing wall and a cutwater extension to the pier. The additions complimented an irrigation diversion immediately west of the bridge.²⁶ In 1938, when the road commission began keeping uniform bridge records, the Provo River Bridge (initially Bridge #57) was renumbered 25-51-3-4. An inspection in May 1938 noted scaling and a deflection in the sidewalk between spans. In 1941, a handrail was repaired at the cost of \$58.60. Following the October 1943 inspection entry, the notation "Not in State System" appeared. The State Road Commission and its successor agency, the Utah Department of Transportation, have continued annual inspection reports of the structure to the present time. No other inspection reports reflect subsequent additions, alterations or repairs to the structure.²⁷

C. Ownership and Future

The State of Utah owned the Provo River Bridge, from its construction in 1919 until 1942, when ownership passed briefly to Utah County. Provo City assumed ownership in 1944.

As communities of Provo and Orem grew, the volume of traffic on Columbia Lane necessitated a widening of the roadway to four lanes. Due to the present deteriorated condition of the bridge and its narrow deck, continued use of the existing bridge was not considered possible. In the Federal Highway Administration's "Determination of Eligibility and Finding of Effect" for the Provo River Bridge, it was recommended that preservation through documentation by the Historic American Engineering Record, as well as the demolition and construction of a new bridge, be undertaken.²⁸

III. BIOGRAPHICAL MATERIAL

A. Engineering and Design

The design for the Provo bridge was a product of the road commission's own engineering staff. The plans listed "W.G.C." as the designer, and "C.S.F." as approving the design. The initials "W.G.C." belonged to W. G. Cook, listed as a draftsman on the engineering department roster for 1917-1918.²⁹ Walter G. Cook worked as a draftsman for the Oregon Short Line Railroad before joining the road commission engineering staff in 1918.³⁰ By 1925, he had left the road commission to work for a private firm.³¹ The 1930 Polk directory noted that he "moved to Los Angeles."³² The initials "C.S.F." belonged to Charles S. Fisher, listed as chief bridge engineer for the road commission on its 1919-1920 employee roster.³³ Fisher's name first appeared on the road commission employee roster in 1917-1918 as a bridge engineer.³⁴ The Polk Directory for 1922 listed him as "Chief Engineer" for the State Road Commission.³⁵ Fisher disappeared from the directory after 1922. Fisher's initial employment with the road commission coincided with ascendancy of the Democratic Bamberger Administration. His termination may have been

part of the extensive purge of road commission personnel following the return of Republican rule in 1920.³⁶

B. Contractor

During his long career, John Holt (1858-1926) was involved in a wide variety of building projects. He built residential and commercial structures in Salt Lake City, he drove pilings for the Saltair Resort and constructed portions of the Mormon-financed railroads that were later absorbed by the Union Pacific and the Denver and Rio Grande Western railroads. Holt was born in Dorsetshire, England, and immigrated to Utah with his parents in 1863. By the age of eight, he was employed in his father's contracting business. In addition to his commercial activities, he served variously as Salt Lake City recorder, a school trustee and a justice of the peace. His specific contribution to bridge construction in Utah was difficult to assess.³⁷

A thorough search of the limited primary and secondary sources available concerning bridge construction projects in Utah produced no evidence that Holt built any other bridge structures. This is not positive proof that the Provo River Bridge was his only bridge contract, but in the absence of a comprehensive statewide bridge survey for Utah which may provide more information from disparate sources, that is the present conclusion.

IV. **ENDNOTES**

- 1 Federal Highway Administration and Utah Department of Transportation, "Determination of Eligibility and Finding of Effect for Project No. BROS-0049; Columbia Lane Bridge Replacement," September 5, 1989, Utah State Historic Preservation Office, Salt Lake City, Attachment 1.
- 2 Eugene E. Campbell, "Early Colonization Patterns," in Utah's History, ed. Richard D. Poll (Provo: Brigham Young University Press), 1978, p. 140.
- 3 W. Turrentine Jackson, Wagon Roads West: A Study of Federal Road Surveys and Construction in the Trans-Mississippi West, 1846-1869 (New Haven: Yale University Press, 1964; rpr. Lincoln: University of Nebraska Press, Bison Books, 1979), p. 141.
- 4 Ibid., p. 143.
- 5 Utah Territory Surveyor General's Office, Cadastral Survey Map of "T 6S - R 2 E. Salt Lake Meridian," November 22, 1856, microfilm, Bureau of Land Management, Salt Lake City/
- 6 Utah Writer's Project, Work Projects Administration, Provo Pioneer Mormon City (Portland: Binfords and Mort, publishers; American Guide Series, 1942, p. 103.

- 7 Ezra L. Knowlton, History of Highway Development in Utah. Salt Lake City: Utah State Road Commission, n.d.), pp. 135-139.
- 8 Utah State Road Commission, Minutes, Vol. I, Utah State Archives, Salt Lake City.
- 9 Utah State Road Commission, Fifth Biennial Report 1917-1918. (Salt Lake City: State of Utah, 1918), p. 12.
- 10 Utah State Road Commission, Minutes, Vol. III, p. 684.
- 11 Knowlton, History of Highway Development in Utah, p. 197.
- 12 Provo Herald, March 10, 1919, p. 2.
- 13 Utah State Road Commission, Minutes, Vol. IV, pp. 328-335.
- 14 Salt Lake Tribune, June 25, 1919, p. 22.
- 15 Utah State Road Commission, Minutes, Vol. IV, pp. 357-362.
- 16 Ibid., pp. 388-389.
- 17 Utah State Road Commission, Permanent Bridge Construction Record 1919, Utah State Archives, Salt Lake City.
- 18 Provo Post, December 5, 1919, p. 2.
- 19 Utah State Road Commission, Sixth Biennial Report. (Salt Lake City: State of Utah, 1923).
- 20 Utah State Road Commission, Utah State Trunk Lines. (Salt Lake City: State of Utah, 1927).
- 21 Utah State Road Commission, Minutes, Vol. IV, p. 387.
- 22 Utah State Road Commission, State Road Map of Utah. (Salt Lake City: State of Utah, 1927).
- 23 Utah State Road Commission, Seventeenth Biennial Report of the State Road Commission. (Salt Lake City: State of Utah, 1942), pp. 32-33.
- 24 Utah State Road Commission, Eighteenth Biennial Report of the State Road Commission. (Salt Lake City: State of Utah, 1944), p. 129.
- 25 Provo City. "North Provo Addition," December 7, 1944, Community Development Department, Annexation Plats, Provo City.

- 26 State Road Commission, "Repairs to Provo Repair Bridge," Drawing No. D-146, 1926(?), Structures Department, Utah Department of Transportation, Salt Lake City.
- 27 Structures Department, Inspection File for Columbia Lane Bridge, Utah Department of Transportation, Salt Lake City.
- 28 Federal Highway Administration, "Determination of Eligibility and Finding of Effect for Project No. BROS-0049; Columbia Lane Bridge Replacement," pp. 1-10.
- 29 Utah State Road Commission, Fifth Biennial Report, p. 5.
- 30 R. L. Polk, R. L. Polk & Co.'s Salt Lake City Directory (Salt Lake City: R. L. Polk & Co. of Utah, 1917), p. 220.
- 31 Ibid. (1925), p. 234.
- 32 Ibid. (1930), p. 350.
- 33 State Road Commission, Sixth Biennial Report, p. 5.
- 34 State Road Commission, Fifth Biennial Report, p. 4.
- 35 R. L. Polk, R. L. Polk & Co.'s Salt Lake City Directory, p. 326.
- 36 Knowlton, History of Highway Development in Utah, p. 204.
- 37 Deseret News, September 6, 1926, p. 1 (2); September 8, 1926, p. 5.

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Salt Lake Tribune. June 25, 1919, p. 22.

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D. Maps/Drawings:

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Utah State Road Commission. "Provo River Bridge." Drawing Number D-146 (4 sheets), Structures Division, Utah Department of Transportation, Salt Lake City.

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E. Historic Photographs:

Utah Department of Transportation. Two views, circa 1938. Inspection File, Columbia Lane Bridge, Structures Division, Utah Department of Transportation.